

# 2018 IEEE-SA **ETHERNET & IP @ AUTOMOTIVE TECHNOLOGY DAY**

9 - 10 October 2018

Olympia London • London, UK

[www.ethernettechnologyday.com](http://www.ethernettechnologyday.com)

## PROGRAM

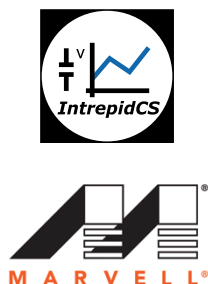
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# 2018 IEEE-SA ETHERNET & IP @ AUTOMOTIVE TECHNOLOGY DAY

Welcome to the **2018 IEEE-SA Ethernet & IP @ Automotive Technology Day** conference in London. Now in its 8th year and for the first time in the UK, in previous years it has been hosted in the USA, France, Japan, and Germany. The conference and its exhibition provides the opportunity for OEMs, suppliers, semiconductor vendors and tool providers to discuss and learn about the evolution of Ethernet standards, technologies and applications in the automotive environment. This year the conference host is Jaguar Land Rover (JLR); the largest automotive employer in the UK.

The exciting presentations for this year's event will help our community to understand the evolution of Ethernet-based automotive networks and the next steps towards 'Faster or Cheaper' networks to address the next level of challenges in the area of Autonomy, Connectivity, Electrification and Shared Vehicles (ACES).

Presentations will provide insights into vehicle applications and will discuss networking, connectivity and architecture issues along with trends and solutions for coping with the cybersecurity aspects of Automotive Ethernet. We will also analyse the status of standardisation efforts of the PHY and MAC layers, and share lessons-learned to guarantee the reliability and quality of Ethernet communication.

I am pleased to welcome Amir Bar-Niv, the VP of Marketing and Strategy from Aquantia Corporation, who is also the president of the recently formed NAV Alliance. Amir will give the keynote speech about the work that the NAV Alliance are doing alongside the IEEE to standardise speeds of 10Gbps and beyond.

A panel session with industry experts will address the challenges of developing a complete Ethernet vehicle and include topics such as security, physical layers, protocols and E/E Architectures. This session will allow a live debate with the audience and create opportunities to present and discuss new challenges on this subject. Finally, the conference will offer a unique networking opportunity for OEMs, suppliers, semiconductor vendors and tool providers with an exhibition hall containing more than 30 booths displaying various demonstrations and Automotive Ethernet products.

I appreciate everyone taking the time to participate and contribute to this important event, and I am confident that we will all have a great opportunity to share lessons-learned, increase our knowledge and discover new aspects of Automotive Ethernet & IP. On behalf of JLR and IEEE, thank you for attending and I look forward to meeting you at the event.

Syreeta Bath, 2018 IEEE-SA EIP@ATD Chair  
Jaguar Land Rover – Next Generation Vehicle Networks

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# CONFERENCE COMMITTEES

## CONFERENCE STEERING COMMITTEE:

Syreeta Bath - Jaguar Land Rover (Chair)  
Ali Muhiaddin - Fiat Chrysler (Vice Chair)  
Joan Woolery - IEEE-SA (Conference Organizer)  
Damon Martini - Robert Bosch  
Daniel Hopf - Continental Automotive

Hiroyuki Matsumoto  
(Continental Automotive) - JASPAR  
Massimo Osella - General Motors  
Jinhwa Yun - Hyundai  
Josetxo Villanueva - Renault

## CONFERENCE PROGRAM COMMITTEE:

Damon Martini - Robert Bosch (Chair)  
Josetxo Villanueva - Renault (Vice Chair)  
Joan Woolery - IEEE-SA (Conference Organizer)  
Daniel Hopf - Continental Automotive  
Hiroyuki Matsumoto - Continental Automotive  
Michael Ziehensack - Elektrobit  
Ali Muhiaddin - Fiat Chrysler  
Jonathan Kuhn - Fiat Chrysler  
Massimo Osella - General Motors  
Prathap Venugopal - General Motors

Steve Carlson - HSP Design  
Sungjin Park - Hyundai  
John Simon - Intrepid Control Systems  
Syreeta Bath - Jaguar Land Rover  
Leonardo Danielan - Magneti Marelli  
Chris Mash - Marvell  
Greg Destexhe - Microchip  
Mike Jones - Microchip  
Chuan Heng Foh - University of Surrey

# CONFERENCE AGENDA

**Tuesday, 9 October 2018**

07:30 – 19:00 Foyer	<b>Registration Counter Open</b>
08:00 – 09:00 Exhibit Hall - East Hall	<b>Morning Beverage</b> (coffee, tea, fruit, pastries)
08:00 – 19:00 Exhibit Hall - East Hall	<b>Exhibit Hall Open</b>
09:00 – 09:30 Auditorium	<b>Opening</b> <i>Master of Ceremonies – Rudi Schubert (IEEE Standards Association)</i> <b>Welcome Speech</b> <i>Simon Chandler (Jaguar Land Rover)</i>
09:30 – 10:00 Auditorium	<b>KEYNOTE: The Inevitable – High Speed Ethernet in Automotive</b> <i>Amir Bar-Niv (Aquantia) – Representing NAV Alliance</i>
<b>NETWORK, ARCHITECTURE, CONNECTIVITY</b>	
10:00 – 10:30 Auditorium	<b>Evolution of Ethernet-based Automotive Networks: Faster AND Cheaper</b> <i>Kirsten Matheus (BMW)</i>
10:30 – 11:00 Exhibit Hall - East Hall	<b>Mid-Morning Coffee Break</b>
11:00 – 11:30 Auditorium	<b>1000BASE-T1 from Standard to Series Production – Enabling Next Generation Scalable Architecture</b> <i>Christopher Mash (Marvell Semiconductor), Olaf Krieger (Volkswagen)</i>
11:30 – 12:00 Auditorium	<b>Software-defined Networking in Automotive</b> <i>Michael Döring (Robert Bosch), Jens Bierschenk (Robert Bosch)</i>
12:00 – 12:30 Auditorium	<b>End to End Connectivity Design with Automotive Ethernet and Service-Oriented Architecture</b> <i>Won Seon Sim (Hyundai Motors), Seung Jun Lee (AirPlug)</i>
12:30 – 14:00 Foyer/Exhibit Hall-East Hall	<b>Lunch</b>
14:00 – 14:30 Auditorium	<b>Seamless Communications for on-/off-board applications</b> <i>Harita Joshi (Jaguar Land Rover), Max Turner (Jaguar Land Rover)</i>
14:30 – 15:00 Auditorium	<b>Harmonization of TSN Parameter Modeling with Automotive Design Flows</b> <i>Marina Gutierrez Lopez (TTTech)</i>
15:00 – 15:30 Exhibit Hall - East Hall	<b>Afternoon Coffee Break</b>
<b>SECURITY</b>	
15:30 – 16:00 Auditorium	<b>Intrusion Detection Adapted for Automotive – Challenges for HW and an Implementation Example</b> <i>Harald Zweck (Infineon Technologies), Ronny Schulze (Infineon Technologies)</i>
16:00 – 16:30 Auditorium	<b>Making gPTP capable for secure time synchronization</b> <i>Bernd Jesse (Vector Informatik)</i>



# CONFERENCE AGENDA

## Tuesday, 9 October 2018 *(continued)*

16:30 – 17:00	Break / Special Panel Session Setup
17:00 – 19:00 Auditorium	<b>Panel Session: Challenges of implementing a complete Ethernet vehicle</b> <i>(E/E Architecture, cybersecurity, safety, quality of service, connectivity, upgradability in the field)</i> <b>Moderator:</b> Syreeta Bath (Jaguar Land Rover) <b>Panelists:</b> Kirsten Matheus (BMW), Don Pannell (NXP), Siddharth Shukla (ESCRYPT), George Zimmerman (CME Consulting), Norman Finn (Huawei)
20:00 – 23:00 Hilton London Kensington Christie Suite	Networking Dinner

## Wednesday, 10 October 2018

07:30 – 12:00 Foyer	Registration Counter Open
08:00 – 09:00 Exhibit Hall - East Hall	Morning Snack
08:00 – 17:30 Exhibit Hall - East Hall	Exhibit Hall Open
<b>PHY, SWITCH, <math>\mu</math>C</b>	
9:00 – 9:30 Auditorium	<b>New 10BASE-T1S in future automotive networking applications</b> <i>Martin Miller (Microchip)</i>
9:30 – 10:00 Auditorium	<b>Standardized Automotive Ethernet Cables and Connectors</b> <i>Steve Carlson (HSP Design)</i>
<b>AVB/TSN, HIGHER LAYER PROTOCOLS, SOFTWARE</b>	
10:00 – 10:30 Auditorium	<b>Increasing Network Efficiency by Combining Ethernet/TSN Standards</b> <i>Don Pannell (NXP Semiconductors)</i>
10:30 – 11:00 Exhibit Hall - East Hall	Mid-Morning Coffee Break
11:00 – 11:30 Auditorium	<b>Automotive Ethernet for Virtual Machines</b> <i>Michael Ziehensack (Elektrobit)</i>
11:30 – 12:00 Auditorium	<b>A comparative analysis of Precision Time Protocol in native, virtual machines and container-based environments for consolidating time sensitive automotive workloads</b> <i>Usman Sarwar (Intel), Boon Leong Ong (Intel), Anil N Kumar (Intel)</i>
12:00 – 12:30 Auditorium	<b>An innovative traffic management scheme for deterministic/event-based communications in automotive applications with a focus on Automated Driving Applications</b> <i>Giancarlo Vasta, Davide Fontana (Magneti Marelli)            Lucia Lo Bello, Filippo Battaglia, Gaetano Patti (University of Catania)</i>

# CONFERENCE AGENDA

## Wednesday, 10 October 2018 *(continued)*

12:30 – 14:00 Exhibit Hall - East Hall	Lunch
14:00 – 14:30 Auditorium	<b>Short Presentations: Platinum Exhibitors, IEEE Standards Association</b> <i>Dave Robbins (Intrepid Control Systems)</i> <i>Will Chu (Marvell Semiconductor)</i> <i>Rudi Schubert (IEEE Standards Association)</i>
<b>VALIDATION &amp; TEST</b>	
14:30 – 15:00 Auditorium	<b>A Simulation Based Analysis of Dynamic Priority Allocation Strategy of IEEE 802.1Q for In-Vehicle Networking Systems</b> <i>Liz James (University of Warwick)</i>
15:00 – 15:30 Exhibit Hall - East Hall	Afternoon Break
15:30 – 16:00 Auditorium	<b>Insights into the performance and configuration of TCP in Automotive Ethernet Networks</b> <i>Nicolas Navet (University of Luxembourg), Jörn Migge (RealTime-at-Work)</i>
16:00 – 16:30 Auditorium	<b>First insights to compliance verification of Automotive Ethernet Switches based on OPEN TC11</b> <i>Alon Regev (Keysight Technologies)</i>
16:30 – 16:35 Auditorium	<b>Closing Remarks</b> <i>Master of Ceremonies – Rudi Schubert (IEEE Standards Association)</i>



Vector Informatik is the leading supplier of software tools and components for developing and networking electronic systems based on Automotive Ethernet, CAN/CAN FD, LIN, FlexRay and MOST as well as on many different CAN-based protocols.

Vector's expertise is passed on to customers in the form of its wide range of products as well as in comprehensive consulting services with system and software engineering. Workshops and seminars round out the many different training options the company offers.

Customers around the world – working in the automotive, commercial vehicle, aerospace, transportation and control engineering industries – all rely on solutions and products from the independent Vector Group.

In addition to its headquarters in Stuttgart, Vector also has subsidiaries in the USA, Japan, France, Great Britain, Italy, Austria, Sweden, South Korea, India, China and Brazil.

### Automotive Ethernet Product Portfolio

Customers all over the world benefit from Vector's products for Automotive Ethernet, that support the vehicle-specific physical layers as well as protocols like SOME/IP, SD, AVB/TSN, DoIP, Smart Charge Communication, etc.

Overview of advantages:

- Model-based development of network architectures, communication descriptions and software design
- Tools for simulation, analysis, and testing of Automotive Ethernet networks and ECUs - together with other automotive bus systems
- Interfaces for direct access to Ethernet networks
- Embedded software with low resource requirements to meet the challenges in the automotive industry
- Universal ECUs for small series and functional models
- Training on Ethernet technologies in the automotive environment



### Ethernet Control Units

Develop them efficiently

... with the Automotive Ethernet solutions from Vector

Our solutions support the specific physical layer in automotive as well as the protocols SOME/IP, AVB, DoIP, etc.

- > Tools for simulating, analyzing and testing of Ethernet networks and controllers – also together with other vehicle bus systems
- > Interfaces for undistorted access to Ethernet networks
- > Embedded Software with small footprint, for automotive use
- > Universal control unit for small production runs, evaluation and development – complete with AUTOSAR basic software
- > Training on Ethernet technologies in the automotive domain

More information & downloads: [www.vector.com/ae](http://www.vector.com/ae)

Benefit from our experience in automotive electronics.

Reference Chart Automotive Ethernet  
Useful know-how, free-of-charge,  
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# Securing the Future of Automotive

Advanced digital features, autonomous vehicles, and new auto safety legislation are all increasing the demand for unprecedented technology in next-generation connected cars. Marvell is here to deliver on those expectations.

Visit Our Booth to Learn More

**MARVELL BOOTH**

Tuesday, October 9, 08:00 - 19:00  
Wednesday, October 10, 08:00 - 16:00  
Booth 16-17

**MARVELL CO-PRESENTS**

1000BASE-T1 from Standard to Series Production—Enabling  
Next Generation Scalable Architecture

Tuesday, October 9, 11:00 AM - 11:30 AM

**CHRISTOPHER MASH**

Automotive Applications and Architecture Sr. Director  
Marvell Semiconductor

**OLAF KRIEGER**

In-Vehicle Architecture and Networking  
Volkswagen AG Germany





**Broadcom Inc. is a diversified global semiconductor leader built on 50 years of innovation, collaboration and engineering excellence.**

Broadcom combines global scale, engineering depth, broad product portfolio diversity, and superior execution and operational focus to deliver category-leading connectivity products so its customers can build and grow successful businesses today and in the future.

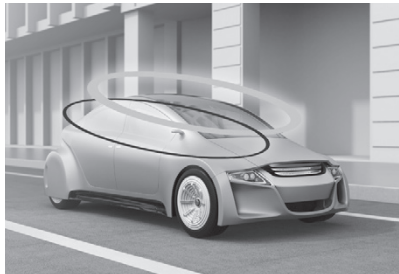
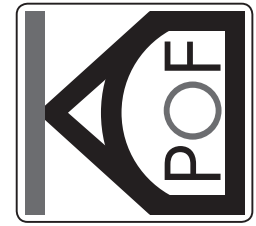


- Inventor of BroadR-Reach® Ethernet technology
- Most comprehensive automotive Ethernet portfolio including PHY, switch and MCU
- Shipped more than 50 million automotive Ethernet ports and growing rapidly
- Steering automotive Ethernet standardization for next-generation in-vehicle networking applications
- Offering full suite of products — including 1G PHY — with lowest power and best-in-class EMC/EMI performance over unshielded twisted pair (UTP) cables

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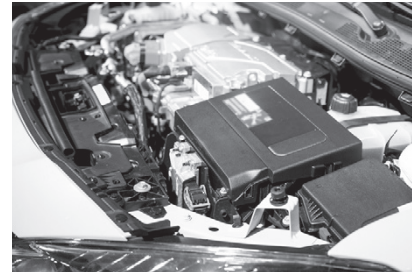
# Gigabit Connectivity over Plastic Optical Fiber



**Autonomous driving  
safety redundancy**



**ADAS sensor  
interconnection**



**Electric Vehicles:  
Galvanic isolation for Battery  
Management Systems**

- EMC-compliant
- Seamless network integration
- 1 Gigabit and beyond
- Low latency, low jitter,  
low linking time

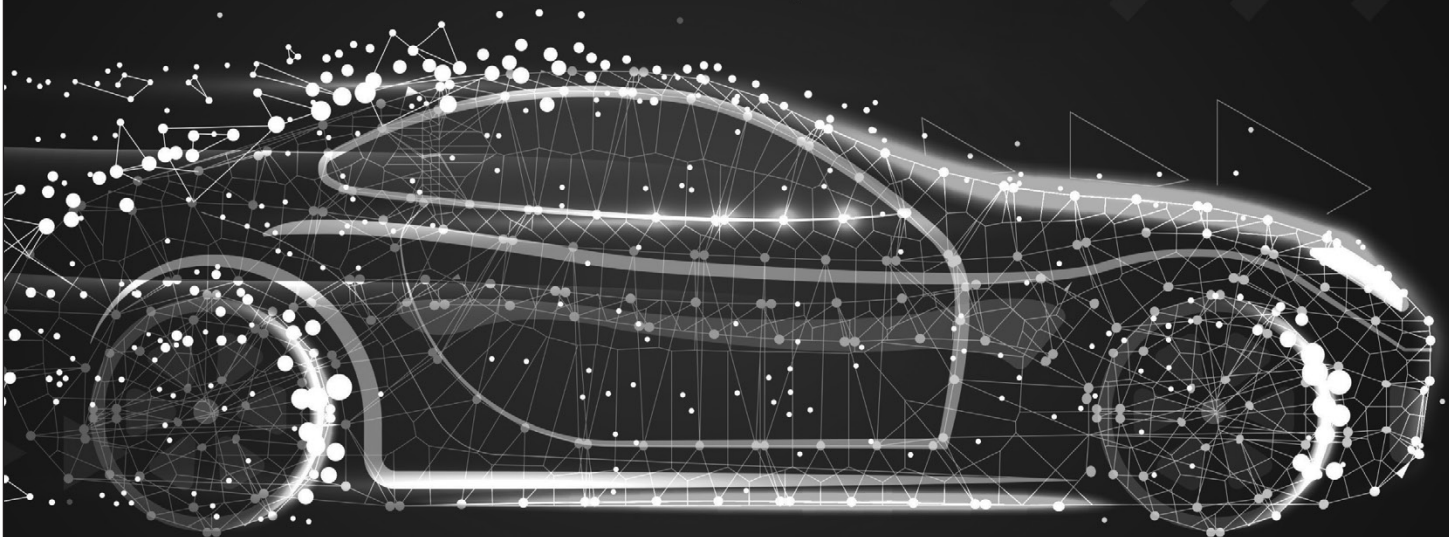


contact:  
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# WE'RE TESTING THE FUTURE RIGHT NOW.

- > 100 & 1000Base-T1 Transmitter, Link Segment and Receiver PHY Compliance Testing
- > Design AVB/ TSN Network for Automotive and Industrial applications
- > Adopt Ethernet as per OPEN Alliance /AUTOSAR /AVNU standards
- > Validate Time-Synchronization accuracy and Traffic Shaping characteristics.



[www.keysight.com/find/automotive-ethernet](http://www.keysight.com/find/automotive-ethernet)

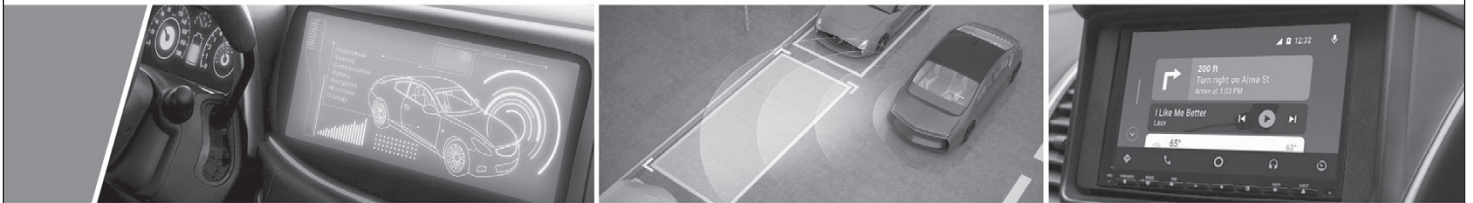
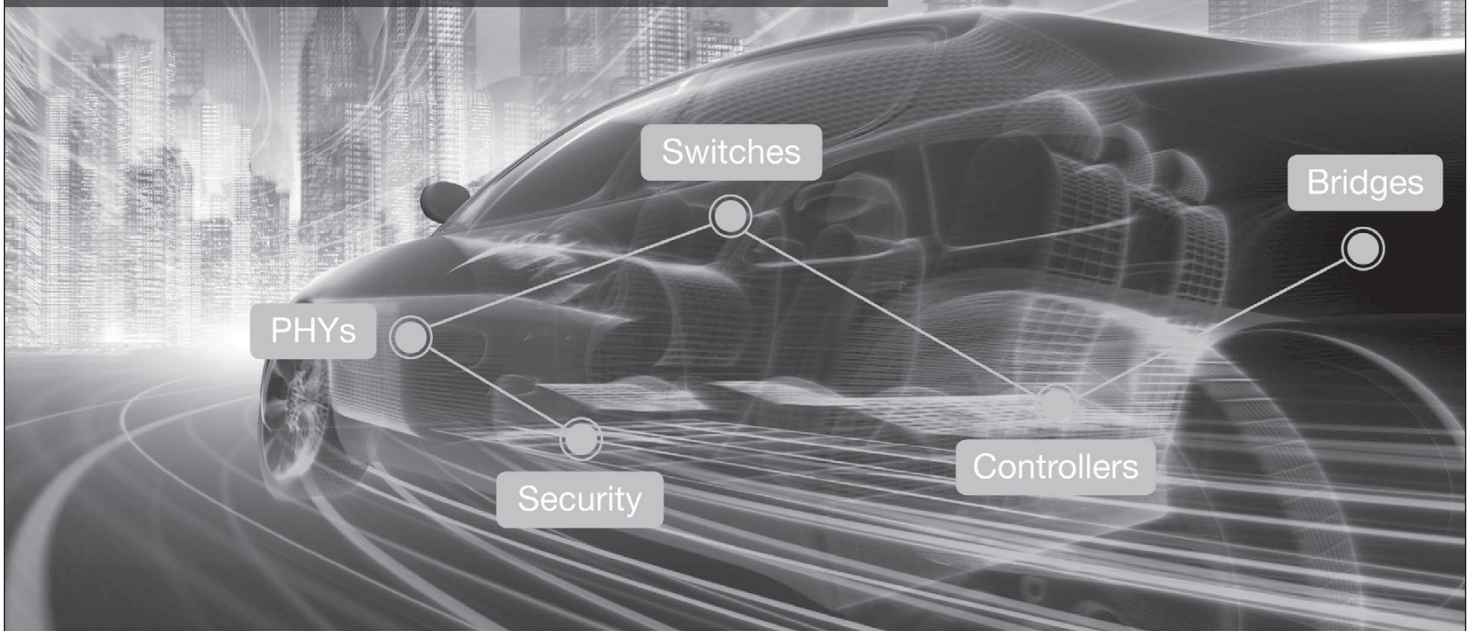


**KEYSIGHT**  
TECHNOLOGIES



# Accelerating the Connected Car

Flexible, Scalable and Secure Automotive Ethernet Solutions

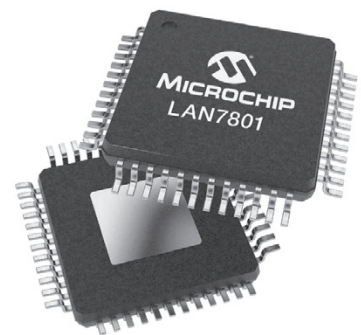


As the leading supplier of automotive-qualified Ethernet devices with the broadest portfolio in the market, Microchip has the solution you need to get connected. Our automotive-grade PHYs, switches, bridges, controllers and security ICs are designed to meet the rigorous demands of a wide variety of in-vehicle networking applications. Microchip's industry expertise and proven Ethernet solutions from 10 Mbps to 1 Gbps help you reduce complexity and risk. From hardware reference designs, software and LANCheck® review to compliance testing and validation tools, we are always with you on your journey. All devices exceed AEC-Q100 qualifications, are Production Part Approval Process (PPAP) supported and have a track record of delivering high quality and reliability via Microchip's zero-PPM program.

## Applications Include

- Telematics
- Backbone
- Advanced Driver-Assistance Systems (ADAS)
- Infotainment

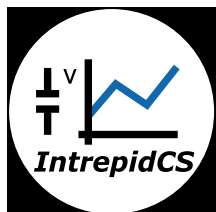
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# EXHIBITORS

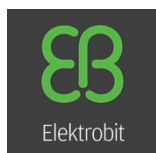
## PLATINUM EXHIBITORS



## GOLD EXHIBITORS



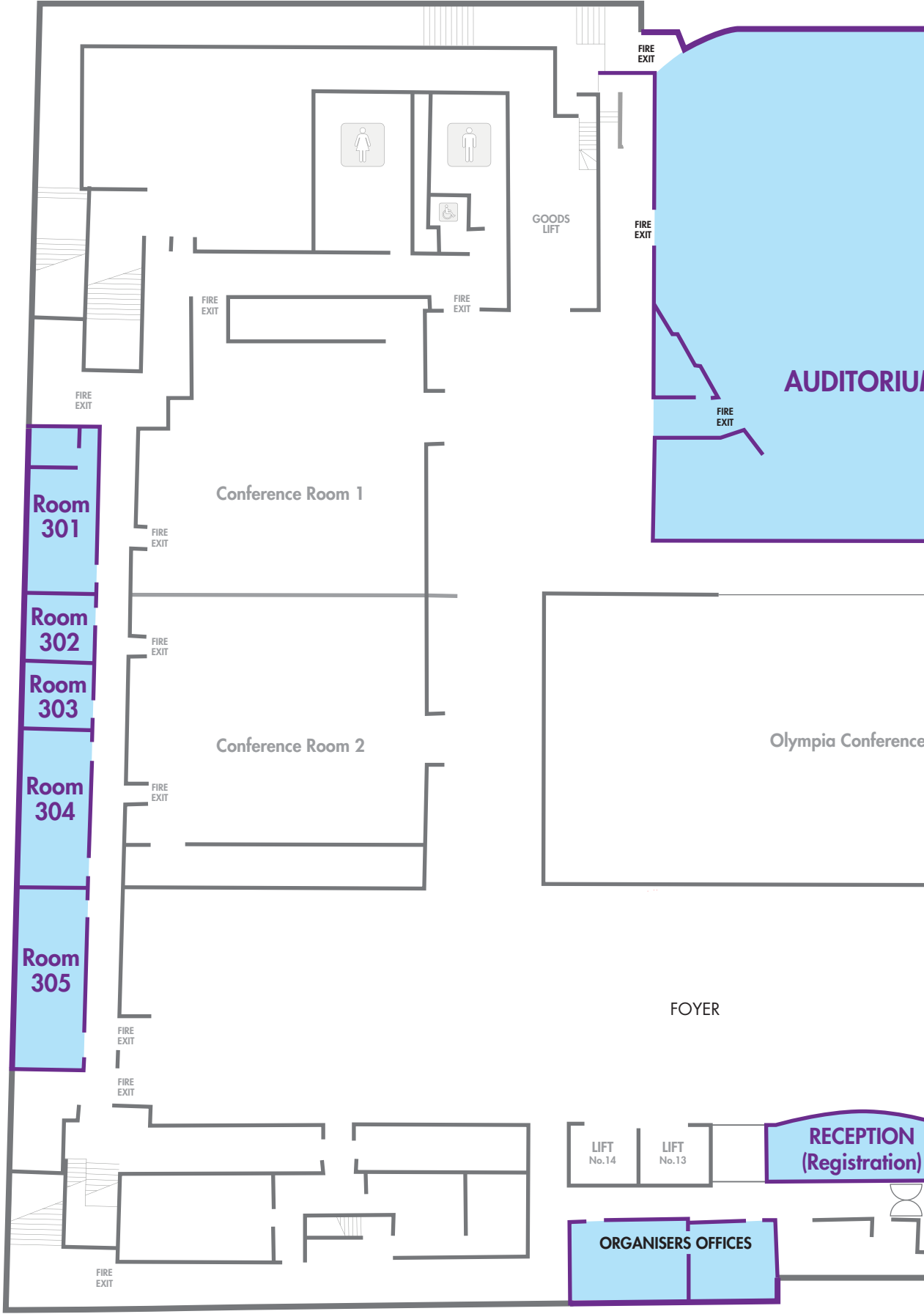
## SILVER EXHIBITORS



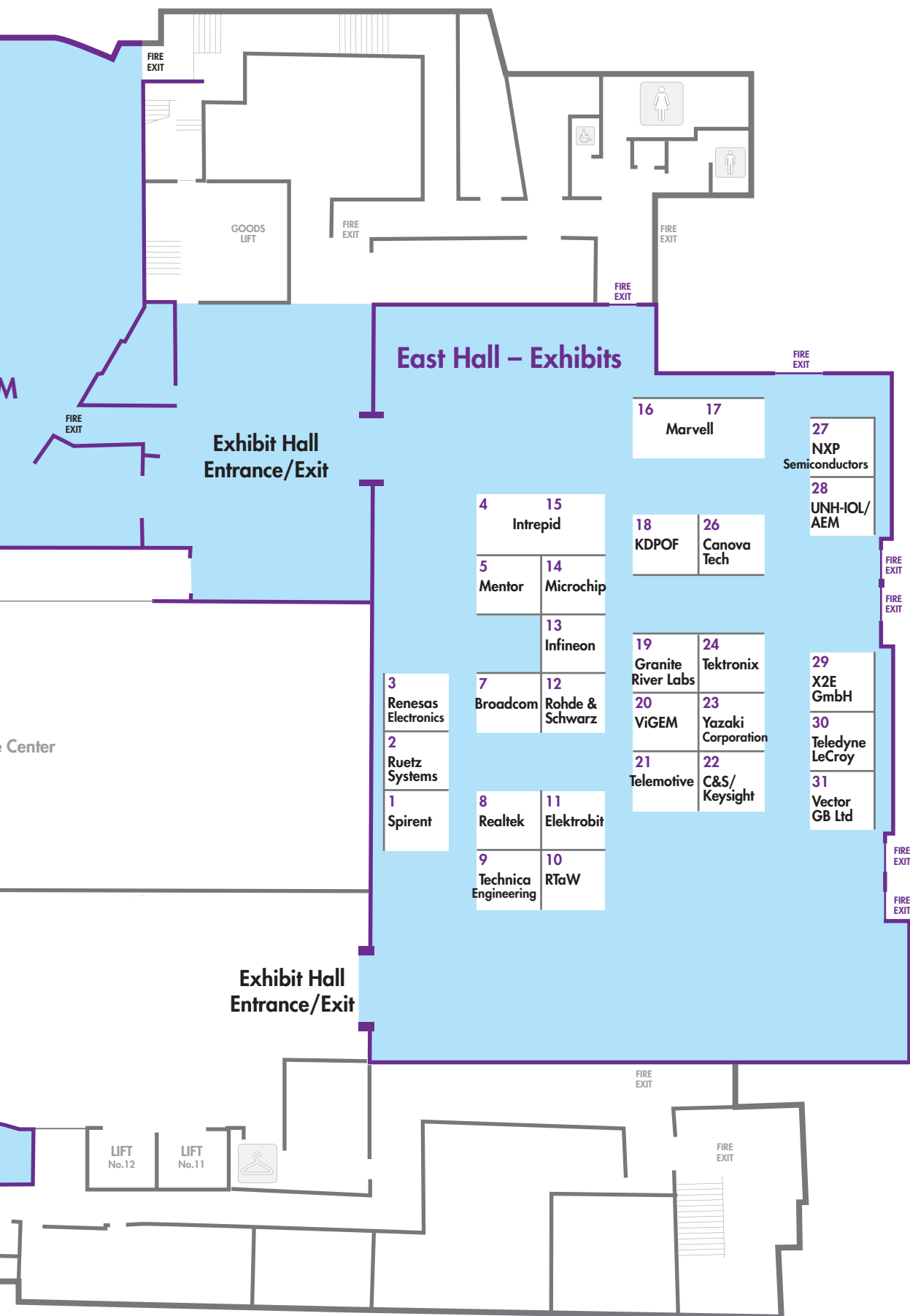
## BRONZE EXHIBITORS



# OLYMPIA CENTRAL LEVEL 3







# EXHIBITOR LISTING

**Booth Number:** 7

**Company Name:** Broadcom

Company Address: 1320 Ridder Park Drive

City/State/Country: San Jose, California, 95131, United States

Website: <http://www.broadcom.com/>

Company Contact: Kabi Prakash Padhi

Title: Senior Product Line Manager

Email Address: [Kabi.padhi@broadcom.com](mailto:Kabi.padhi@broadcom.com)

Phone Number: +1 949 926 4770

Broadcom Inc. is a diversified global semiconductor leader built on 50 years of innovation, collaboration and engineering excellence.

Broadcom's extensive product portfolio serves multiple applications within four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & others. Applications for our products in the automotive in-vehicle connectivity segment include: Advanced Driver Awareness Systems, Infotainment, Telematics and Gateways. Broadcom invented the existing 100Base-T1 BroadR-Reach technology which has been adopted by multiple Automotive OEMs worldwide and has shipped more than 60 Million ports into production.

Broadcom Inc. combines global scale, engineering depth, broad product portfolio diversity and superior execution and operational focus to deliver category-leading connectivity products so its customers can build and grow successful businesses today and in the future.

**Booth Number:** 26

**Company Name:** Canova Tech

Company Address: Piazza Mario Saggin, 2

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Website: [www.canovatech.com](http://www.canovatech.com)

Company Contact: Alessandro Ingrassia

Title: General Manager

Email Address: [alessandro.ingrassia@canovatech.com](mailto:alessandro.ingrassia@canovatech.com)

Contact Phone Number: +393343997006

Based in Padova, Italy, Canova Tech has been providing Standards and Custom IP plus Design Services for full IC Integration, to a global client base of tier-one companies since 2005.

Our Engineers attend and contribute to several Standards, including IEEE 802.3 initiatives, OPEN Alliance and USB IF.

We understand and implement Customer requirements from concept definition down to transfer to production.

Our Customers benefit directly from our insight into the market direction through our fundamental values, Technology Innovation, State of the Art mixed-signal Design Methodology and the Quality of Deliverables.

At IEEE Ethernet & IP @ Automotive Technology day we will be showcasing our offerings for Automotive Ethernet Standard IP including the newly developed 10BASE-T1S, 10Mbps, MultiDrop Automotive Ethernet PHY.

**Booth Number:** 22

**Company Name:** C&S group GmbH

Company Address: Am Exer 19B

City/State/Country: Wolfenbuettel / Lower Saxony / Germany

Website: [www.cs-group.de](http://www.cs-group.de)

Company Contact: David Bollati

Title: President

Email Address: [d.bollati@cs-group.de](mailto:d.bollati@cs-group.de)

Phone Number: +49 5331 90 555 0

**Company Name:** Keysight Technologies Deutschland GmbH

Company Address: Herrenberger Str. 130

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Website: [www.keysight.com](http://www.keysight.com)

Company Contact: Ulrike Schaeppers

Title: Senior Manager Field Marketing EMEA

Email Address: [ulrike.schaeppers@keysight.com](mailto:ulrike.schaeppers@keysight.com)

Phone Number: + 49 7031 4641

C&S group, Keysight and Ixia, a Keysight business, partner to address the challenging tasks of safeguarding, validating and optimizing automotive Ethernet communications.

Ethernet technologies enable flexible, scalable and cost-effective in-vehicle networks. As such, automotive industries are looking to automotive Ethernet as the next-generation communication bus and it has become increasingly important as a backbone to a car's communication network. Safety standards and increased consumer communication demands require the automotive industry to add more applications with ever-increasing complexity for connectivity to networks.

To ensure optimal design, safety, and interoperability of these connected and autonomous cars, automakers and their suppliers need comprehensive test solutions to validate devices, systems, applications, and even the entire in-vehicle network. All versions of the automotive Ethernet PHY require rigorous testing: IEEE 802.3bw, IEEE 802.3bp, and OABR 3.2. Adhering to these specifications covering transmitters, receivers, and harness/connector assemblies requires complex testing.

On the higher protocol layers, a new set of technologies have evolved to ensure existing automotive applications such as ADAS, infotainment and diagnostics are compatible with new Ethernet-based communication systems. New technologies like audio/video bridging (AVB) and time-sensitive networking (TSN) have matured and secured their application in the car network.

C&S Group, Keysight and Ixia are committed to providing full quality automotive Ethernet layer 1 to 7 test solutions, simulation and consulting services. The synergy between their areas of expertise is a decisive factor for future success. With Ixia's 20+ years of leadership in Ethernet validation and C&S's additional 20+ years of research and expertise in automotive communications, they offer together an industry test lab and solutions that automotive manufacturers and suppliers can trust to validate robustness and conformity to standards.

More about us:

<https://www.cs-group.de/testing/conformance-tests/automotive-ethernet/>

[www.keysight.com/find/automotive-ethernet](http://www.keysight.com/find/automotive-ethernet)

<https://www.ixiacom.com/solutions/iot/automotive-ethernet-testing>

**Booth Number: 11**  
**Company Name: Elektrobit Automotive GmbH**

Company Address: Am Wolfsmantel 46  
City/State/Country: 91058 Erlangen, Germany  
Website: <http://www.elektrobit.com/>  
Company Contact: Michael Ziehensack  
Title: Managing Director Austria  
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Phone Number: +431599835094

Elektrobit (EB) is an award-winning and visionary global supplier of embedded and connected software products and services for the automotive industry.

A leader in automotive software with over 30 years serving the industry, EB's software powers over 1 billion devices in more than 90 million vehicles and offers flexible, innovative solutions for connected car infrastructure, human machine interface (HMI) technologies, navigation, driver assistance, electronic control units (ECUs), and software engineering services.

EB is a wholly owned subsidiary of Continental AG.

**Booth Number: 19**  
**Company Name: Granite River Labs**

Company Address: 3500 Thomas Road, Suite A  
Santa Clara, CA 95054  
City/State/Country: Santa Clara/CA/USA  
Website: <http://graniteriverlabs.com/>  
Company Contact: Brissa Ortega (for booth and conference info only)  
Title: Marketing Coordinator  
Email Address: bortega@graniteriverlabs.com  
Contact Phone Number: 408-471-7389

The world's leading Engineering Services and Test Automation Solutions firm for connectivity, GRL helps engineers solve tough design and validation challenges. GRL began in 2010 with a vision to provide affordable test services to help hardware developers implement digital interface technologies as they become faster, more complex, and more challenging to test. Today, GRL has worked with hundreds of companies from our worldwide test facilities and R&D centers. Learn more at <http://graniteriverlabs.com/>

**Booth Number: 13**  
**Company Name: Infineon Technologies AG**

Company Address: Am Campeon 1-15, 85579 Neubiberg  
(near Munich), Germany  
Website: [www.infineon.com](http://www.infineon.com)  
Phone Number: +49 89 234-0  
Founded: 1999  
Employees: 37,479 employees worldwide  
(as of 30 September 2017)  
Revenues: €7,063 million revenue in the 2017  
fiscal year  
Product portfolio: Semiconductors

Infineon designs, develops, manufactures and markets a broad range of semiconductors and system solutions. The focus of its activities is on automotive electronics, industrial electronics, RF

applications, mobile devices and hardware-based security.

Combining entrepreneurial success with responsible action, at Infineon we make the world easier, safer and greener. Barely visible, semiconductors have become an indispensable part of our daily lives. Infineon's components play an essential role wherever electric energy is generated, transmitted and used efficiently. Furthermore, they safeguard data communication, improve safety on roads and reduce automotive emissions.

**PLATINUM EXHIBITOR**

**Booth Number: 4,15**  
**Company Name: Intrepid Control Systems, Inc.**

Website: [www.intrepidcs.com](http://www.intrepidcs.com)  
Company Contact: Don Hatfield  
Title: Director of Global Sales  
Email Address: icsevents@intrepidcs.com  
Phone Number: 586-731-7950 x 722

Intrepid Control Systems provides the most innovative and capable tools for engineers in autonomy, testing, and embedded engineering. Recognized worldwide for our neoVI and ValueCAN series devices, Intrepid has also developed a family of advanced Automotive Ethernet tools. This family includes switches, media converters, active taps and data loggers.

Switches: RAD-Pluto and RAD-Jupiter, our newest tools, are 5 and 7 port managed switches for 100BASE-T1, 1000BASE-T1, and 1000BASE-T. RAD-Jupiter supports AVB/TSN with deep packet inspection. Both switches have two CAN FD channels and one LIN channel.

Media Converters: RAD-Moon 2 is a 100/1000BASE-T1 media converter based on the Marvel 88Q2112. RAD-SuperMoon is a 100/1000BASE-T1 media converter plus an AVB simulator and active tap all in once device.

Active Taps: RAD-Galaxy is a 6x active tap, 12x media converter and standalone in-vehicle data logger with 8x CAN/CAN FD support. RAD-Star 2 is an active tap that copies full duplex communication. It also has 2x CAN/CAN FD and 2x 100BASE-T1 PHYs.

Data Loggers: RAD-Gigalog is an advanced data logger that allows you to capture 6+ TB of data. It includes autonomous controller logging, camera/radar tapping, CAN logging, XCP logging and much more. RAD-Galaxy is another standalone in-vehicle data logger option with 8x CAN/CAN FD support.

Intrepid supports AVB/TSN standards, including 802.1Qat (SRP), 802.1Qav (FQTSS), and 802.1AS (gPTP). We support all other popular networks and protocols, including AUTOSAR, CAN FD, LIN, FlexRay, Keyword 2000, J1939, ISO 14229 and GMLAN. Intrepid has offices in every major automotive center: USA, China, Japan, Germany, England, India, Korea, and Australia. Intrepid belongs to the Automotive Engineering Tool Alliance ([www.aeta-rice.com](http://www.aeta-rice.com)), a comprehensive tool chain for state-of-the-art automotive electronics development.



## EXHIBITOR LISTING (continued)

**Booth Number:** 18  
**Company Name:** KDPOF Knowledge Development for POF, S.L.

**Company Address:** Ronda de Poniente 14, 2ª Planta  
**City/State/Country:** Tres Cantos, Spain 28760  
**Website:** [www.kdpof.com](http://www.kdpof.com)  
**Company Contact:** Óscar Ciordia  
**Title:** Sales and Marketing Director  
**Email Address:** [support@kdpof.com](mailto:support@kdpof.com)  
**Phone Number:** +34 918043387

KDPOF delivers automotive Gigabit Ethernet Plastic Optical Fiber (GEPOF) for electric and autonomous driving to perfectly solve the electrical challenges and interferences of new powertrain architectures. With electromagnetic noise being a major issue, POF provide the optimal means to achieve galvanic isolation to meet EMC. The first automotive GEPOF transceiver KD1053 provides high connectivity with a flexible digital host interface, low latency, low jitter, and low linking time. It complies with the standard amendment IEEE Std 802.3bv™ and thus fully meets the requirements of carmakers. Applications include: battery management, inter-domain communications backbones, antenna hubs, Ethernet 100 Mbps links, autonomous driving, and surround view ADAS.

### PLATINUM EXHIBITOR

**Booth Number:** 16, 17  
**Company Name:** Marvell Semiconductor  
**Company Address:** 5488 Marvell Lane  
**City/State/Country:** Santa Clara, California, USA  
**Website:** [www.marvell.com](http://www.marvell.com)  
**Company Contact:** PUBLIC RELATIONS: For media inquiries, please contact [pr@marvell.com](mailto:pr@marvell.com)  
INVESTOR RELATIONS: For investor relations inquiries, please contact [ir@marvell.com](mailto:ir@marvell.com)  
**Phone Number:** 1-408-222-2500

About Marvell: Marvell first revolutionized the digital storage industry by moving information at speeds never thought possible. Today, that same breakthrough innovation remains at the heart of the company's storage, processing, networking, security and connectivity solutions. With leading intellectual property and deep system-level knowledge, Marvell's semiconductor solutions continue to transform the enterprise, cloud, automotive, industrial and consumer markets. To learn more, visit: [www.marvell.com](http://www.marvell.com)

**Booth Number:** 5  
**Company Name:** Mentor, A Siemens Business  
**Company Address:** Rivergate House, Newbury Business Pk, London Rd  
**City/State/Country:** Newbury RG14 2QB, United Kingdom  
**Website:** <https://www.mentor.com/>  
**Company Contact:** Stefan Marx  
**Title:** Marketing Manager Automotive Europe

**Email Address:** [stefan\\_marx@mentor.com](mailto:stefan_marx@mentor.com)  
**Contact Phone Number:** +49 (0)89 570 96133

Mentor, a Siemens business, is a world leader in software solutions for electronics and electrical systems engineering. We provide software products, consulting services and support for electrical system design and wire harness manufacturing, from initial platform architecture definition to in-service maintenance. Mentor's client base includes OEMs, tier 1 suppliers, wire harness manufacturers both small and large, and specialist vehicle manufacturers. The Capital tool chain is the solution to support the design, analysis, manufacture, and service of electrical connectivity and communication systems for Automotive, Aerospace and complex Machinery.

For the Automotive industry Mentor provides a broad portfolio of automotive design tools and software. As part of this portfolio Mentor provides Automotive Ethernet support with the VSA COM Designer and the Volcano™ product line.

**Booth Number:** 14  
**Company Name:** Microchip Technology Inc.  
**Company Address:** 2355 W Chandler Blvd  
**City/State/Country:** Chandler, Arizona, USA 85224-6199  
**Website:** <http://www.microchip.com/>  
**Company Contact:** Mike Jones  
**Title:** Sr. Automotive Marketing Manager  
**Email Address:** [Mike.Jones@microchip.com](mailto:Mike.Jones@microchip.com)  
**Phone Number:** +44 (0)7900242570

Microchip Technology Inc. is a leading provider of microcontroller, mixed-signal, analog and Flash-IP solutions. With over 150,000 customers worldwide, Microchip's products enable applications in the consumer, automotive, industrial, communications, defense and aerospace and computing industries. As a leading supplier of real-time automotive networking, connectivity and security solutions, including Ethernet, USB, CAN, LIN and Media Oriented Systems Transport (MOST®), Microchip has a long history of delivering embedded solutions to automotive customers around the world. All products are AEC-Q100 qualified, PPAP supported and deliver high quality and reliability via Microchip's zero-PPM quality program. Our mission is to deliver products and services that continuously improve all aspects of vehicle connectivity.

Since introducing the very first AEC-Q100-qualified Ethernet devices to the market in 2008, Microchip leadership has continued with the shipment of over 100 million automotive-grade Ethernet ports to the field. For more information, visit the Microchip website at [www.microchip.com](http://www.microchip.com)

**Booth Number:** 27  
**Company Name:** NXP Semiconductors Germany GmbH  
**Company Address:** Troplowitzstraße 20  
**City/State/Country:** 22529 Hamburg  
**Website:** [www.nxp.com](http://www.nxp.com)  
**Company Contact:** Nicola Concer  
**Title:** International Product Manager - Automotive Ethernet  
**Email Address:** [nicola.concer@nxp.com](mailto:nicola.concer@nxp.com)

Phone Number: +31 (0)6 19 27 12 91

NXP Semiconductors N.V. (NASDAQ:NXPI) enables secure connections and infrastructure for a smarter world, advancing solutions that make lives easier, better and safer. As the world leader in secure connectivity solutions for embedded applications, NXP is driving innovation in the secure connected vehicle, end-to-end security & privacy and smart connected solutions markets. Built on more than 60 years of combined experience and expertise, the company has over 30,000 employees in more than 30 countries and posted revenue of \$9.26 billion in 2017. Find out more at [www.nxp.com](http://www.nxp.com).

NXP provides the technology for solutions around the vehicle from advanced driver assistance systems, secure access, infotainment, in-vehicle networking, body, chassis and safety applications. Transforming the car from a simple mode of transport into a mobile information hub, NXP's robust in-vehicle networking and secure interfaces connect vehicles to each other and the outside world. NXP's technologies involve car access, broadcast reception, automotive microcontrollers, in-vehicle networks and a growing portfolio of vision, radar and sensor fusion processors, 802.11p and NFC solutions.

NXP is a leading provider of semiconductors for all vehicle applications and a recognized innovator in automotive networking technology shipping a total of two million automotive transceivers every day. NXP has a strong legacy of engagement in automotive Ethernet: it was one of the first semiconductor suppliers to develop an automotive IEEE 100BASE-T1 Ethernet PHY and the first to introduce the TC10 Wake-Up Forwarding function to the market. NXP has a long-term strategy for creating the enabling technology in the high-date-rate in-vehicle networks. NXP approach offers safe and secure PHY and switches with the lowest external component count, enhanced low-power modes, small PCB area and a roadmap to Multi-Gigabit performance.

**Booth Number: 8**  
**Company Name: Realtek Semiconductor Corp.**

Company Address: No.2, Innovation Road II,  
Hsinchu Science Park

City/State/Country: Hsinchu, Taiwan

Website: <http://www.realtek.com/>

Company Contact: Albert Kuo

Title: Director

Email Address: [albertk@realtek.com](mailto:albertk@realtek.com)

Phone Number: +886-916271473

Realtek's RTL9047A Automotive Ethernet Switch Controller wins  
Coming Soon: Realtek's highly integrated and high performance  
Multi-G Automotive Switch!

**Booth Number: 10**  
**Company Name: RealTime-at-Work (RTaW)**

Company Address: Immeuble "les Thiers", 4 Rue Piroux,  
54000 Nancy

City/State/Country: Nancy / France

Website: <http://www.realtimeatwork.com/>

Company Contact: Jérôme MICHEL

Title: Managing Director

Email Address: [jerome.michel@realtimeatwork.com](mailto:jerome.michel@realtimeatwork.com)

Phone Number: +33 (0)6 87 23 21 36

Company Description: RTaW builds on 20+ years of experience in Simulation and Timing Analysis for critical systems. Our ability to produce highly applicable solutions is proven by our success in helping our clients design cars, planes, helicopters, space launchers, power grids and industrial systems. RTaW is leading the way in Ethernet TSN design, performance evaluation and configuration tools. Our unique ZeroConfig-TSN design-space exploration method means that your TSN network is configured for correctness and maximum efficiency.

**Booth Number: 3**  
**Company Name: Renesas Electronics Europe**

Company Address: Arcadiastr. 10

City/State/Country: D-40472 Dusseldorf

Website: [www.renesas.com](http://www.renesas.com)

Company Contact: Mr. Thorsten Hoffleit

Title: Manager Automotive Solution  
Business Unit

Email Address: [Thorsten.Hoffleit@renesas.com](mailto:Thorsten.Hoffleit@renesas.com)

Phone Number: +49 211 6503-0

Renesas delivers trusted embedded design innovation with complete semiconductor solutions that enable billions of connected, intelligent devices to enhance the way people work and live – securely and safely. As the number one global supplier of microcontrollers, and a leader in A&P and SoC products, Renesas provides the expertise, quality, and comprehensive solutions for a broad range of Automotive, Industrial, Home Electronics (HE), Office Automation (OA) and Information Communication Technology (ICT) applications to help shape a limitless future. With over 800 hardware and software alliance partners worldwide, it has the industry's largest local support network.

**Booth Number: 12**  
**Company Name: Rohde & Schwarz UK Limited**

Company Address: Ancells Business Park

City/State/Country: Fleet, Hampshire, England GU51 2UZ

Website: <http://www.rohde-schwarz.com/>

Company Contact: Kerry Dicker

Title: Marketing Communications

Email Address: [contact.uk@rohde-schwarz.com](mailto:contact.uk@rohde-schwarz.com)

Phone Number: 01252 818888

Rohde & Schwarz is a leading manufacturer of test and measurement equipment with a comprehensive test expertise in all types of electronic and wireless applications. For the automotive industry, we provide the insight and tools needed to efficiently design, develop and test components, modules and systems. Our expertise extends to the following areas: radar, Ethernet (100-/1000-Base-T1) and other in-vehicle buses (such as FlexRay, CAN), connectivity including next generation eCall, 5G, V2X, security and of course EMC.

## EXHIBITOR LISTING (continued)

**Booth Number: 2**  
**Company Name: RUETZ SYSTEMS SOLUTIONS GmbH**

Company Address: Oskar-Schlemmer-Str. 13  
City/State/Country: 80807 Munich / Bavaria / Germany  
Website: [www.ruetz-system-solutions.com](http://www.ruetz-system-solutions.com)  
Company Contact: Mr. Michael Zapletal  
Title: Senior Sales Engineer  
Email Address: [michael.zapletal@ruetz-system-solutions.com](mailto:michael.zapletal@ruetz-system-solutions.com)  
Contact Phone Number: +49 (89) 2000413-70

Experts for Data Communication in Vehicles  
With comprehensive expertise in automotive data communication and the interconnected world, RUETZ SYSTEM SOLUTIONS provides full service for manufacturers and suppliers for a smooth and on-time start of production (SOP). As technology partner, we assist with engineering services and test laboratory solutions as well as with broad competence for data transmission, so that your products will fulfill the highest standards for quality, robustness and compliance.

RUETZ SYSTEM SOLUTIONS is a competent partner in the definition and validation of Ethernet solutions. Special attention rests on the assessment of migrating the standard of carrier systems into the automotive world. Our customers profit in particular from our competence at the Physical Layer, the middleware as well as from the adaptation of existing systems into reliable, robust and automotive-ready solutions.

Our service portfolio includes training for automotive Ethernet and the design of architecture and system specifications. In addition, we provide support for the development of Ethernet, AVB, TSN and TCP-IP software as well as for the design of hardware for different physical layers. Furthermore, we offer a broad service spectrum ranging from requirements engineering over test specifications and the design of test setups to the implementation of unit, system integration, application and compliance testing.

**Booth Number: 1**  
**Company Name: Spirent Communications**

Company Address: 2708 Orchard Parkway, Suite 20  
City/State/Country: San Jose, California 95134  
Website: [www.spirent.com/Automotive](http://www.spirent.com/Automotive)  
Company Contact: Ali Angha  
Email Address: [Ali.Angha@spirent.com](mailto:Ali.Angha@spirent.com)  
Phone Number: 818-964-3200

Spirent's Automotive test solutions enable their customers to develop, verify and operate innovative communication networks, devices and applications that perform as intended.

Spirent is showcasing brand new developments for automated testing of in-vehicle and V2X connectivity that help you

- Validate Automotive Ethernet functionalities against standards and own test specifications
- Optimize your TSN devices and networks on performance, reliability, and conformance
- Evaluate new V2X implementations based on conformance and real-world simulation

Visit their booth to see product demonstrations and to speak with their Automotive experts about your testing challenges.

Faster or cheaper? Faster time to market or lower development costs? No need to compromise. Spirent helps you achieve both, simultaneously. Promise. Assured.

**Booth Number: 9**  
**Company Name: Technica Engineering GmbH**

Company Address: Leopoldstr.236  
City/State/Country: 80807 Munich, Germany  
Website: [www.technica-engineering.de](http://www.technica-engineering.de)  
Company Contact: Erick Parra  
Title: Business Development Manager  
Email Address: [erick.parra@technica-engineering.de](mailto:erick.parra@technica-engineering.de)  
Phone Number: +49 89 200 07 24 – 29  
Mobile Number: +49 176 6086 8699  
2nd Company Contact: Jaume Tamargo  
Title: Head of R&D  
Email Address: [jaume.tamargo@technica-engineering.de](mailto:jaume.tamargo@technica-engineering.de)  
Phone Number: +49 89 - 200 07 24 – 24  
Mobile Number: +49.151.63433805  
3rd Company Contact: Thomas Königseder  
Title: CTO  
Email Address: [Thomas.Koenigseder@technica-engineering.de](mailto:Thomas.Koenigseder@technica-engineering.de)  
Phone Number: +49 89 - 200 07 24 - 10  
Mobile Number: +49 176 30735403

We are pioneers in the integration of Automotive Ethernet. Since 2008 we supported the standardization of 100Base-T1 (BroadR-Reach™) via BMW and the OPEN Alliance and specialized in complex ECU test solutions for OEM's like BMW, Audi, Volvo and Renault. With our ECU prototyping activities and our testing solutions, we have acquired an especially important role in the introduction of Ethernet as a communication technology inside the automobile.

We apply our knowledge for engineering at all stages of E/E development and work with major OEM's and Tier 1 suppliers worldwide. Our comprehensive network of distributors and partners enable us to provide optimal service and delivery on-site.

Our products combine 100BASE-T1 and 1000BASE-T1 with CAN, CAN-FD, FlexRay, LIN and analogue interfaces and have the best reputation in the market for performance and conformance. Support of AVB/TSN is part of our scope which is key to ADAS and other key features.

We combine our own product development with consulting. In close cooperation with our customers, our engineers and consulting teams draw up tailored solutions that are reliable, flexible and innovative.

Find our product information online now:  
<https://technica-engineering.de/en/products/>

More details on this contact:  
[technicalsales@technica-engineering.de](mailto:technicalsales@technica-engineering.de)



**Booth Number:** 24  
**Company Name:** Tektronix  
City/State/Country: UK  
Website: <https://uk.tek.com/>  
Company Contact: Darshan Mehta  
Title: Product Marketing Manager  
Email Address: [darshan.mehta@tektronix.com](mailto:darshan.mehta@tektronix.com)  
Phone Number: +44 1344 392 400

We are the measurement insight company committed to performance, and compelled by possibilities.

Tektronix designs and manufactures test and measurement solutions to break through the walls of complexity, and accelerate global innovation. Together we empower engineers to create and realize technological advances with ever-greater ease, speed and accuracy. Tektronix solutions have supported many of humankind's greatest advances of the past 70 years.

Tektronix offers a wide range of Test solutions for automotive customers across the entire product lifecycle including OEM's, Tier 1 suppliers, and Silicon providers. Tektronix offers solution for testing electronics for automotive Networking, Radar, ADAS, Infotainment, Electrical vehicle, EMI/EMC and High-Speed Serial standards.

We help ensure complete vehicle systems work reliably and provide required safety with Tektronix comprehensive automotive solutions.

**Booth Number:** 30  
**Company Name:** Teledyne LeCroy  
Company Address: Im Breitspiel 11c,  
City/State/Country: 69126 Heidelberg, Germany  
Website: <http://teledynelecroy.com/europe>  
Company Contact: Giuseppe Leccia  
Title: T3 High Value Program Manager  
Email Address: [giuseppe.leccia@teledyne.com](mailto:giuseppe.leccia@teledyne.com)  
Phone Number: +39 335 76 36 480

#### Our Company Description:

Teledyne LeCroy is a leading manufacturer of advanced oscilloscopes, protocol analyzers, and other test instruments that verify performance, validate compliance, and debug complex electronic systems quickly and thoroughly. Since its founding in 1964, the Company has focused on incorporating powerful tools into innovative products that enhance "Time-to-Insight". Faster time to insight enables users to rapidly find and fix defects in complex electronic systems, dramatically improving time-to-market for a wide variety of applications and end markets. For more information, visit Teledyne LeCroy's website at [teledynelecroy.com/europe](http://teledynelecroy.com/europe).

**Booth Number:** 21  
**Company Name:** Telemotive AG  
Company Address: Breitwiesen  
City/State/Country: 73347 Mühlhausen, Germany  
Website: [www.telemotive.de](http://www.telemotive.de)  
Email Address: [info@telemotive.de](mailto:info@telemotive.de)  
Phone Number: +49 7335 18493-0

Leading engineering service for automotive electronics  
Telemotive is a leading engineering service for automotive electronics and digitalization. The core competencies are software development, HMI (human machine interface), infotainment, connectivity, and automotive-specific tools and infrastructure. The interconnectedness and flexible cooperation of the business areas are unique. Since 2016 the company is part of the international automotive supplier Magna International and belongs to the Magna Steyr group.

**Booth Number:** 28  
**Company Name:** UNH InterOperability Lab & AEM  
Company Address: 21 Madbury Rd  
City/State/Country: Durham, NH USA  
Website: [www.iol.unh.edu](http://www.iol.unh.edu) & [www.aem-test.com](http://www.aem-test.com)  
Company Contact: Curtis Donahue  
Title: Senior Manager, Ethernet Technologies  
Email Address: [cdonahue@iol.unh.edu](mailto:cdonahue@iol.unh.edu)  
Contact Phone Number: 1-603-862-4534

The University of New Hampshire InterOperability Lab (UNH-IOL) and AEM collaborate on the specification developments and testing of the Ethernet Automotive Standards physical layer. The UNH-IOL's industry experience and expertise aided by state-of-the-art test and measurement equipment, such as AEM's cost effective vector network analyzer test solutions, can assist in identifying potential conformance and interoperability issues while reducing time to market.

Since 1988, the UNH-IOL has been an independent provider of broad-based testing and standards conformance solutions for the networking industry. Offering testing for Automotive Ethernet Devices including ECU's, cabling and infotainment systems. Specifically, the UNH-IOL offers PHY testing for 1000BASE-T1 and 100BASE-T1. In addition, we are an OPEN Alliance approved test laboratory, offering TC1 and TC10 test specifications for 100BASE-T1 PHY conformance. Learn more at [iol.unh.edu](http://iol.unh.edu).

AEM's Mixed Mode Multi-Port Vector Network Analyzer (MMVNA) is a cost effective solution that performs automotive Ethernet test including single pair and distance to fault. MMVNA supports S-parameter testing in single-ended or dual-ended configurations with 8 or 16 ports respectively. The linux based programming interface, and configurable measurement parameters make MMVNA an ideal tool for automotive Ethernet cabling test. Visit [AEM-Test.com](http://AEM-Test.com) for more information

## EXHIBITOR LISTING (continued)

**Booth Number:** 31

**Company Name:** Vector GB Ltd

Company Address: 1320 Solihull Parkway, Birmingham Business Park

City/State/Country: Birmingham, UK

Website: [vector.com](http://vector.com)

Company Contact: Simon Davies

Title: Sales Manager

Email Address: [simon.davies@vector.com](mailto:simon.davies@vector.com)

Contact Phone Number: 01217887900

Vector has been your capable partner in the development of automobile electronics for 30 years. From 24 locations worldwide, over 2,000 employees support manufacturers and suppliers of the automotive industry and related industries with a professional platform of tools, software components and services for developing embedded systems. Whilst the industry is confronted with diverse challenges in the field of Ethernet communication Vector is able to assist our partners with professional tools, basic software and services.

Providing a range of highly-developed products and competent services based on many years of experience in automotive networking. Vector is able to provide solution for 100BASE-T1 technology (BroadR-Reach), DOiP, V2G and a universal multibus tool chain that makes it easy to incorporate new technologies in existing vehicle architectures. Vectors practice-oriented solutions are based on our work in technical standardization committees such as the OPEN Alliance SIG, ISO 15118, DIN 70121 and AUTOSAR as well as our intensive cooperation with users.

Driven by our passion for technology we develop solutions which relieve engineers of their demanding tasks.

**Booth Number:** 20

**Company Name:** ViGEM GmbH

Company Address: Zeppelinstr. 2

City/State/Country: D-76185 Karlsruhe, Germany

Website: <http://www.vigem.de/>

Company Contact: Peter Blume

Title: Head of Sales and Marketing

Email Address: [peter.blume@vigem.de](mailto:peter.blume@vigem.de)

Contact Phone Number: +49.721.90990.500

ViGEM GmbH contributes to the traffic safety of the future by developing test tools for the automotive industry representing cutting edge of technology. Developing solutions with optimum customer benefit in validation and verification of ADAS / AD test and development applications is core competence of the ViGEM team. ViGEM CCA data logging systems enable lossless recording of automotive busses such as Ethernet (1G, 10G, and 100Base-T1), FlexRay, LVDS, CAN-FD, LIN, etc. with one single device. All incoming data is labelled with a synchronous time stamp with  $\pm 100$  ns resolution. The removable CCA data storage allows to continuously run test vehicles in driving test. The maximum data rate of 6 Gbit/s (25 Gbit/s coming soon), the modular all-in-one concept, and the advanced data handling tools make CCA solutions unique. For recording even higher data rates CCA systems can be easily cascaded.

**Booth Number:** 29

**Company Name:** X2E GmbH

Company Address: Jahnstraße 2b

City/State/Country: 76870 Kandel

Website: [www.x2e.de](http://www.x2e.de)

Company Contact: Matthias Müller

Title: Technical Sales

Email Address: [info@x2e.de](mailto:info@x2e.de)

Contact Phone Number: +49 (0) 72759143100

The X2E GmbH is an innovative technology company located in the Palatinate, Germany. We are a specialist for high-performance automotive data loggers and a well-established supplier for the industry. All of our XORAYA data loggers can be configured individually due to their adaptable assembly with interfaces. This helps us to guarantee a great flexibility towards the needs of our clients. The loggers are furthermore capable of taking data records from several automotive bus systems simultaneously with a 100ns precision timestamp. Among these bus systems are Ethernet, CAN-FD, FlexRay, 100/1000Base-T1, RS232, LIN and many more. With an in-house production facility, X2E also offers a broad range of electronic manufacturing services. This enables us to support our customers with products tailored exactly to their needs and, more importantly, to develop innovative solutions for them. Innovation, quality and customer satisfaction is what X2E is vouching for.

**Booth Number:** 23

**Company Name:** Yazaki

City/State/Country: Canton, MI U.S.A.

Website: <https://www.yazaki-group.com/global/>

Company Contact: Yazaki Corp. Technology Management Center

Title: Technology Management

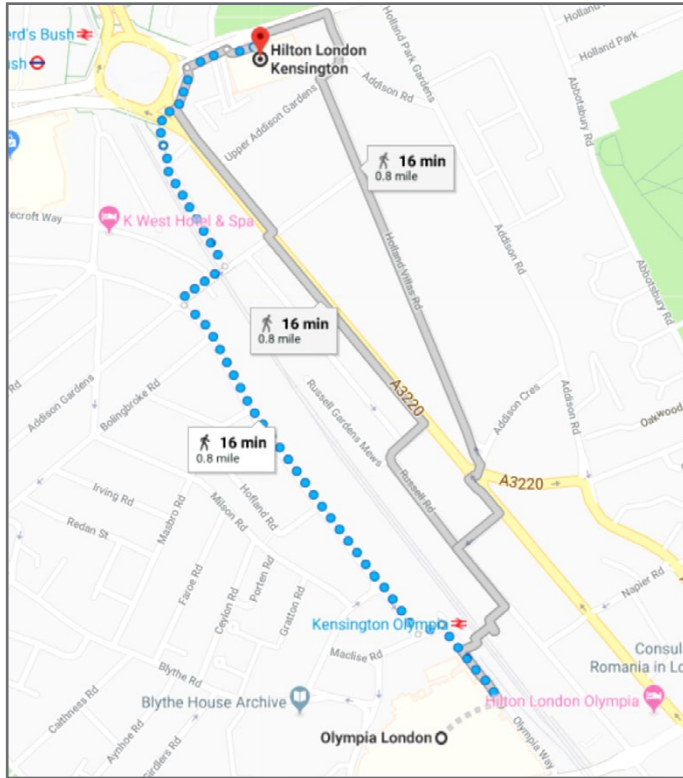
Email Address: [smb\\_yazaki-ethernet.techpr@jp.yazaki.com](mailto:smb_yazaki-ethernet.techpr@jp.yazaki.com)

Phone Number: 734-983-1000

Yazaki Corporation is an independent automotive supplier founded in 1941. Today it is a market leader in the area of automotive wiring harness systems, components, electronics, instrumentation, high voltage and supplies major OEMS all over the world with innovative solutions. As of 2017 June more than 285,000 committed and highly motivated employees are working at 619 locations in 46 countries contribute to Yazaki's global success. For more information about how Yazaki can help you Connect to the Future, please visit [www.yazaki-group.com/global](http://www.yazaki-group.com/global).

# DIRECTIONS TO NETWORKING DINNER

## Olympia London to Hilton London Kensington



Dinner is in the Christie Suite at the Hilton London Kensington.

**Walk 0.8 mile, 16 minutes**

### Olympia London

Hammersmith Rd, Hammersmith, London W14 8UX, UK

Head northwest on Olympia Way toward Maclise Rd  
430 ft

Turn left onto Maclise Rd  
131 ft

Turn right onto Sinclair Rd  
0.3 mi

At the roundabout, take the 1st exit onto Addison Gardens  
285 ft

Turn left onto Hansard Mews  
0.1 mi

Slight right toward Holland Park Ave/A402  
417 ft

Turn right onto Holland Park Ave/A402  
210 ft

Turn right  
128 ft

### Hilton London Kensington

179-199 Holland Park Ave, Kensington, London W11 4UL, UK

# CONNECTED TO THE FUTURE

Technica Engineering is a pioneer in the integration of Automotive Ethernet. From supporting the standardization of 100Base-T1 to providing End-of-Line testing systems, we apply our knowledge for engineering services at all stages of E/E development.

We support the most prestigious OEM's and Tier 1 suppliers with solutions in 100BASE-T1, 1000BASE-T1, CAN-FD, AVB, FlexRay, LIN adaptors and provide ethernet compliance tests, comprehensive E/E testing services, self-developed, state-of-the-art HiL systems as well as hardware and software testing systems.



Get in touch with us: [www.technica-engineering.de](http://www.technica-engineering.de)





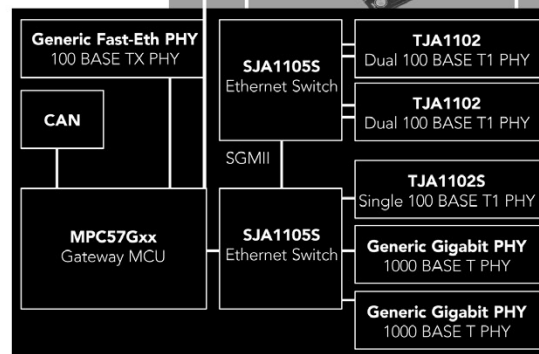
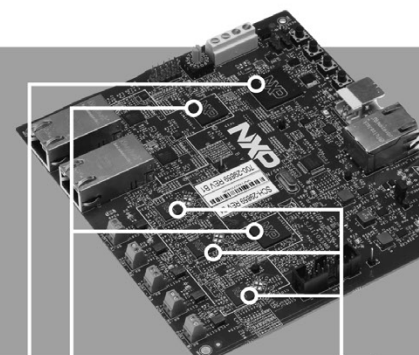
# GET STARTED WITH NXP TRUE AUTOMOTIVE ETHERNET

THE NEW SJA1105SMBEVM PROTOTYPING PLATFORM IS A READY-TO-GO SOLUTION TO JUMP-START YOUR TRUE AUTOMOTIVE DESIGN.

The board includes the **NXP MPC574xG** ultra-reliable MCUs for Automotive & Industrial Control and Gateways, the **NXP SJA1105S** safe and secure Ethernet TSN Switch, the **NXP TJA1102** Automotive 100BASE-T1 dual PHY and the **NXP TJA1145FD** CAN transceiver. The board also offers three 100/1000BASE-T PHYs for easy con-nect to a PC and network equipment.

The board is **OPEN TC10** ready and comes with an Software Development Kit (SDK) based on **NXP S32 Design Studio** enabling you to start your project within minutes after receiving it.

Finally, the board is compatible with NXP-original AUTOSAR OS and AUTOSAR Ethernet drivers, licensed separately.



## TARGET APPLICATIONS

Gateway and Body controllers  
Autonomous vehicles  
TC10 Wake up evaluation

## PART NUMBER

## DESCRIPTION

MPC574xG	Ultra-reliable MCU
SJA1105S	Ethernet Switch
TJA1102 and	Dual 100BASE-T1 PHY
TJA1102S	Single 100BASE-T1 PHY
TJA1145FD	CAN transceiver

## ADVANTAGES

- + Jump-start ECU development
- + Evaluate CAN-to-Ethernet Communication
- + Network diagnostics and media converter



# The **PROMISE**

OF ACCELERATING YOUR TEST AND VALIDATION PROCESS.

**Spirent** assures your Automotive Ethernet implementations will conform and perform to industry standards and specifications.

**spirent**<sup>TM</sup>  
Promise. Assured.

## Driving the future of software

Answer your customers' needs with superior  
automotive software by Elektrobit.

**EB**  
Elektrobit

For more  
information, visit

[elektrobit.com](http://elektrobit.com)

## ETHERNET LIVE MONITOR

Live Testing with Intelligent Data Management



→ The Ethernet Live Monitor (ELM) allows the testing of TSN/AVB implementations in Ethernet networks.

→ Implemented rule checkers identify errors in real time and initiate a recording in the data logger through the trigger output.

→ An additional monitoring function displays analysis data in real time on the PC client and informs about time deviation of the TSN/AVB implementation.

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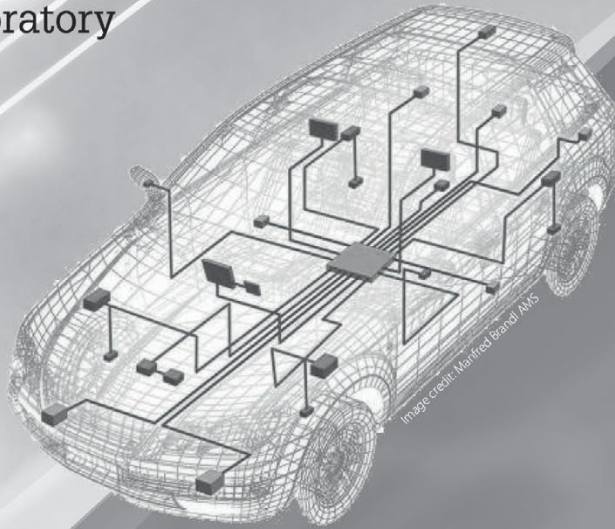




University of New Hampshire  
InterOperability  
Laboratory

## Automotive Ethernet Conformance Interop Testing

- Open Alliance PHY
- 1000Base-T1 PMA Testing
- 100Base-T1 Interop Testing
- Avnu Automotive Certification



## Automotive Single Pair Ethernet Testing

- 8-port VNA
- Affordably Priced
- Compact & Portable

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# Mentor Automotive



connectivity

*connecting car, driver  
& the external world*



autonomous

*autonomous driving &  
driver assist systems*



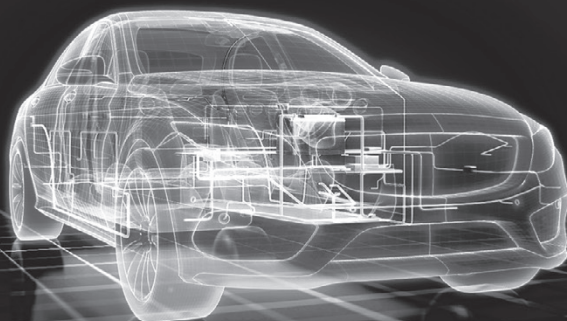
electrification

*electric vehicles &  
supporting technology*



architecture

*EE architecture &  
system implementation*



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# *A Complete Toolset for* ***AUTOMOTIVE ETHERNET***

## SWITCHES



**RAD-Pluto and RAD-Jupiter:** 5 and 7 port managed switches for 100BASE-T1, 1000BASE-T1, and 1000BASE-T. RAD-Jupiter also supports AVB/TSN with deep packet inspection. Both include 2x CAN FD and 1x LIN.



## MEDIA CONVERTERS



**RAD-Moon 2:** 100/1000BASE-T1 media converter based on the Marvell 88Q2112.



**RAD-SuperMoon:** 100/1000BASE-T1 media converter, AVB simulator, and active tap.

## ACTIVE TAPS



**RAD-Galaxy:** 6x active tap, 12x media converter and standalone in-vehicle data logger with 100BASE-T1 and 8x CAN/CAN FD support.



**RAD-Star 2:** Tap copies full duplex communications; 2x CAN/CAN FD, 2x 100BASE-T1 PHYs.

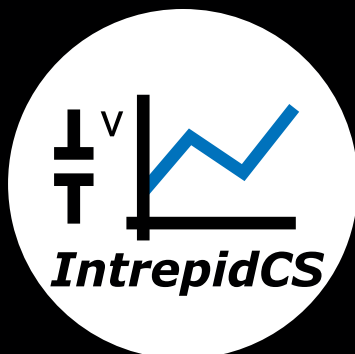
## DATA LOGGERS



**RAD-Gigalog:** Log 6+ TB of data! Includes autonomous controller logging, camera/radar tapping, CAN logging, XCP logging & more.



**RAD-Galaxy:** Standalone in-vehicle data logger with 8x CAN/CAN FD support.



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## CONTROL SYSTEMS

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